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Understanding the varieties in first-year university students' experience of self-regulated learning during emergency remote teaching

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ABSTRACT

First-year students often lack basic self-regulated learning skills when transitioning to higher education. The emergency remote teaching period during the COVID-19 pandemic enhanced the importance of skills in self-regulated learning, due to the reduction of face-to-face contact with the teacher. This study focuses on first-year students' experiences of their challenges related to self-regulated learning as well as how they engage in self-regulated learning during emergency remote teaching in autumn 2020. The data consisted of 67 reflective journals written by first-year students. The journals were analysed using a thematic analysis. The findings show that there were considerable differences between the students in terms of their ability to engage in self-regulated learning, particularly in how they approached the challenges mentally and in terms of study behaviour. However, most of the first-year students adjusted relatively well to emergency remote teaching in terms of their self-regulated learning and were able to utilise self-regulated learning strategies at least to some extent. This study stresses particularly the importance of some components of self-regulated learning: good time management skills and an ability to regulate attention, as well as positive academic emotions and a high level of self-efficacy. Conclusions of the study are also discussed.

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Emergency remote teaching; self-regulated learning; first-year experience; higher education; COVID-19 pandemic

Introduction

During the first weeks and months in higher education (HE), students adjust their expectations to the new environment – trying to identify what is needed in the new situation, as well as try to acquire a sense of one's ability to cope and create relationships with others (De Clercq et al. 2018). This first encounter with HE can be a challenging period for

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students (McCardle et al. 2017; van der Meer, Jansen, and Torenbeek 2010). They may experience loneliness, lack of social support, feelings of maladjustment, and psychological discomfort (e.g. Díaz-Mujica et al. 2019). They might also find the need for independent studying in HE surprising, even shocking (Perander et al. 2020).

When the COVID-19 pandemic hit in 2020 and led to a total disruption of on-site teaching, students had a difficult time adjusting to what has been called *emergency remote teaching* (ERT) (Barbour et al. 2020). First-year students during the fall in 2020 were particularly vulnerable since they lacked previous experience of studying in HE, remotely, and independently. Hence, engaging in self-regulated learning (SRL) became very evident and important for these students.

There has been an explosion of research interest in university students' experiences related to SRL, during the pandemic (e.g. Apridayani, Han, and Waluyo 2023; Biwer et al. 2021; Hadwin et al. 2022; Hamdan et al. 2021; Hensley, Iaconelli, and Wolters 2022; Klimova et al. 2022; Liebendörfer, Kempen, and Schukajlow 2022; Lin and Dai 2022; Mahmud and German 2021; Meshram, Paladino, and Cotronei-Baird 2022; Naujoks et al. 2021; Pelikan et al. 2021; Sutarni et al. 2021; Tabuenca, Greller, and Verpoorten 2022).

Despite this, both Hensley, Iaconelli, and Wolters (2022) and Xu et al. (2023) call for more research on self-regulated learning in online and ERT learning contexts. Moreover, an exceptional feature of the pandemic was that challenges with self-regulated learning became easier to detect and identify since the loss of teacher support made students' shortcomings related to SRL more visible. That is why circumstances like the pandemic are valuable outsets for researching aspects related to teaching and learning, particularly students' SRL skills. However, we already have some research knowledge on students' SRL challenges in general during the pandemic (Biwer et al. 2021; Naujoks et al. 2021; Pelikan et al. 2021), as well as how students in general adapted to ERT in terms of SRL (Biwer et al. 2021). Since previous research (e.g. Biwer et al. 2021) suggests that students differed in their approach and abilities to adapt to ERT, we focus in this study on investigating these (qualitative) varieties between first-year students in terms of SRL.

Addressing such gaps in research, our research question is: *What were the students' various experiences of their self-regulated learning during ERT?* The focus lies on students' SRL-related challenges with ERT and how they coped with these challenges with the support of resource-management and metacognitive strategies. We also investigated students' level of academic self-efficacy.

This paper proceeds with a presentation of the theoretical framework and a literature review. Next, we describe the context of the study, the data, the method and the participants. We then present the findings. Next, we discuss the findings in the light of previous research. Lastly, we present some conclusions based on our results.

Theoretical framework

According to Panadero (2017), self-regulated learning includes aspects related to learning, such as cognitive, metacognitive, behavioural, motivational, and emotional/affective aspects. Consequently, theories, models and concepts related to SRL, and how these are interrelated, have been widely discussed in research (e.g. Hardy, Day, and Steele 2019; Puustinen and Pulkkinen 2001; Zimmerman and Schunk 2001). Therefore, a visualisasion of concepts and their interrelationship relevant for this study can be found in Figure 1.

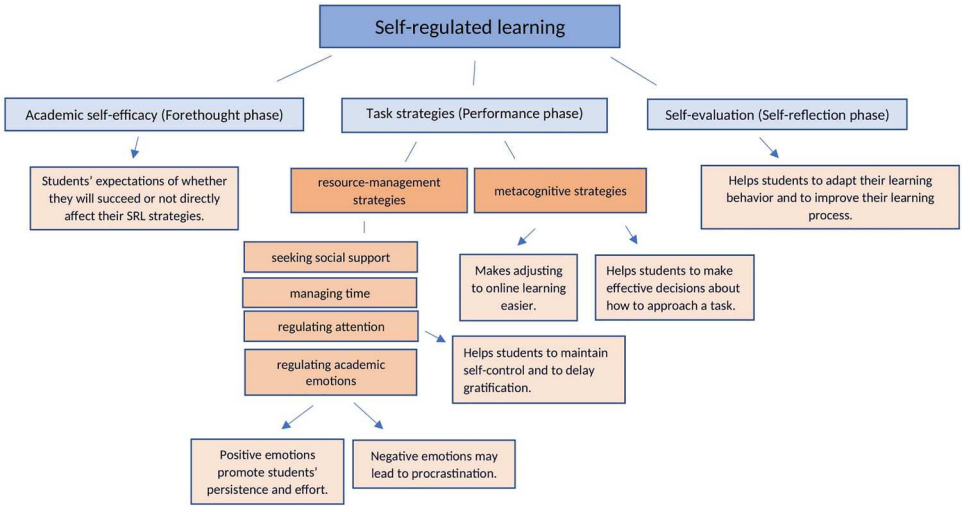

Figure 1. A visualisation of concepts related to self-regulated learning.

Self-regulated learning is generally described as a self-directed process in which students reconstruct mental abilities into academic skills they can use for planning, engaging in and completing tasks (Zimmerman 2002). Students ideally measure their learning against a standard such as the feedback they receive, which provides information about their performance. When reflecting on the feedback, students with good SRL skills can readjust the learning process if needed (Pintrich 2004). Researchers have illustrated this process in various ways (Boekaerts 1991; Winne and Hadwin 1998), but Zimmerman's *Cyclical phases model* (2002) is the most referred to in educational research (Panadero 2017).

Zimmerman's model is organised into three phases: forethought, performance, and self-reflection (Zimmerman 2002). First, students analyse the task, set goals and plan how to achieve these goals, as well as reflect on their capability to learn. Second, students monitor their performance, employ suitable learning strategies, and self-observe their behaviour. In the third phase, students focus on self-reflection and self-evaluation – they might find explanations of reasons for success or failure (causal attribution), but also adapt their learning behaviour to improve their learning process (Zimmerman 2002).

Students may use a variety of resource-management and metacognitive strategies as part of their SRL behaviour (Dresel et al. 2015). Resource-management strategies (Biwer et al. 2021; Dresel et al. 2015; Panadero 2017) refer to students' ability to create optimal learning settings, that is to seek social support, to manage time as well as to regulate attention and emotions. Regulating attention, maintaining self-control and delaying gratification, (Duckworth et al. 2019) may contribute to students' academic progress, especially in remote teaching settings (Zhu, Au, and Yates 2016) and is therefore essential for particularly first-year students' academic progress (Stork et al. 2016). Metacognitive strategies on the other hand, can help students become aware of their own cognitive abilities, understand how they learn, and make more effective decisions about how to

approach a task or solve a problem (Zimmermann 2000). Recent studies also highlight the importance of metacognitive strategies in adjusting to ERT, to support students in planning and managing their learning (Biwer et al. 2021; Pelikan et al. 2021).

The extent to which students can utilise their SRL strategies is associated with important subcomponents of SRL, such as the students' level of academic self-efficacy (Bradley, Browne, and Kelley 2017) as well as their academic emotions (Asikainen, Hailikari, and Mattsson 2018). Academic self-efficacy (ASE) refers to students' confidence in achieving academic success (Bandura 1997) and is believed to be one of the most important predictors of achievement (e.g. Schneider and Preckel 2017). Students with high levels of ASE also tend to use more SRL strategies than those with lower levels of self-efficacy (Zimmerman 2000).

Moreover, ASE is strongly related to academic emotions in the sense that students are believed to use their own emotions as cues in judging their efficacy (Usher and Pajares 2006). For instance, strong negative emotions concerning academic tasks can impair students' beliefs about capability. Further, students experiencing negative academic emotions tend to concentrate on threats, which in turn restricts the cognitive resources essential for engaging in learning activities (Derakshan, Smyth, and Eysenck 2009). Therefore, the ability to endure and regulate uncomfortable emotions when working on difficult tasks is important for SRL skills (Perander et al. 2020).

Literature review

Many studies have demonstrated that SRL is an important contributor to students' learning success in general (e.g. Alegre 2014; Barnard-Brak, Lan, and Paton 2010; Broadbent and Fuller-Tyszkiewicz 2018; Broadbent and Poon 2015; Khan, Shah, and Sahibzada 2020; Perander, Londen, and Holm 2021; Puzziferro 2008; Wolters and Brady 2020; Yot-Domínguez and Marcelo 2017; Zhu, Au, and Yates 2016). Particularly, SRL plays an important role in first-year students' adjustment to HE (Cazan 2013) but also in their adjustment to online learning (Broadbent and Fuller-Tyszkiewicz 2018).

However, students' ability to make use of SRL can become more difficult in online environments than in face-to-face settings due to higher requirements for students to work autonomously and have more self-discipline (Barnard-Brak, Lan, and Paton 2010). Consequently, having the ability to regulate their own learning is crucial for university students to succeed in independent learning environments like online courses, and to compensate for the lack of face-to-face interaction that is typical in online education (Li 2019). Research stresses particularly students' ability to manage and allocate time for studying (Wilson, Joiner, and Abbasi 2021), but also to restructure their learning environment and to seek help and support for their learning (Plant et al. 2005). The ability to employ social strategies is crucial for first-year students' sense of belonging, and ultimately, for their academic success (van der Zanden et al. 2018).

Research on students' experiences during ERT confirms that university students in general experienced heavy SRL-related challenges. The study of Naujoks et al. (2021) found that students experienced challenges with utlising resource-management strategies during ERT, even if they in general perceived their digital readiness as high. The researchers assumed that students didn´t see the relevance of using such strategies or simply lacked the ability to use them. Other SRL-related challenges during ERT were

problems with increased autonomy (Biwer et al. 2021), with procrastination as well as attention and effort regulation (Biwer et al. 2021; Naujoks et al. 2021), with isolation and lack of suitable learning facilities (Biwer et al. 2021; Cranfield et al. 2021; Thurab-Nkhosi, Maharaj, and Ramadhar 2021) and with unstable network connection (Apridayani, Han, and Waluyo 2023). Studies also point out the isolation from peers and teachers as one of the most severe challenges for university students (Biwer et al. 2021). Interaction made possible through breakout rooms was not enough to compensate for the lack of physical interaction and support (Hyland and O'Shea 2021).

Since studies have shown decreasing mental well-being among university students during the pandemic (Sarasjärvi et al. 2022) there was a likelihood of ASE to be negatively affected by ERT. However, studies on ASE during ERT show that self-efficacy beliefs might be resistant to extreme changes in the learning environment, such as the pandemic (Talsma et al. 2021). However, research suggests that ASE is associated with the level of students' adjustment to ERT. Pelikan et al. (2021) found in their study that even if all respondents perceived challenges with respect to keeping track of tasks as well as with time management during the pandemic, students that perceived themselves as having a high competence indicated that they were more successful in dealing with these challenges compared to students that perceived themselves as having low competence.

Despite the challenges students faced during the pandemic, research shows that students dealt with ERT fairly well (Liebendörfer, Kempen, and Schukajlow 2022), and some students even preferred online learning to attending offline classes (Hyland and O'Shea 2021). Most of the students were able to adapt to the new circumstances, especially in terms of regulating their efforts and time (Biwer et al. 2021) and in performing well with self-regulated online studying (Klimova et al. 2022).

Context of the study – self-regulated learning in Finnish education

Students entering higher education in Finland are expected to be well equipped with knowledge of self-regulated learning, for two reasons. First, both the national curriculum for basic education (FNAE 2014) and the core curriculum for general upper secondary education (FNBE 2016) point out the importance of SRL and advocate students becoming independent and self-regulated learners. Second, teachers in Finland are expected to use self-assessment practice – a key component of SRL – in basic education (grades 1–9) (FNAE 2014). Consequently, students are expected to have developed their skills in learning to learn and SRL when they transit to university (FNAE 2014). However, research shows that training in self-assessment is inadequate. A study of Finnish foreign language teachers in Finnish upper secondary schools (Mäkipää 2021) showed that most teachers do not teach their students to self-assess their learning. In addition, several other studies conclude that many Finnish students enter university with poor skills in SRL (Virtanen and Nevgi 2010).

Data, participants and method

The data consist of 67 reflective journals written by social science students who completed a mandatory self-study online course in study skills in autumn 2020, at a university in Finland. In all, 90 students participated in the course, and of these, 73 students

consigned their reflective journals for our research. However, six of these students were not first-year students and were therefore excluded from the study.

Students entered the course in mid-October 2020. Their first assignment was to go through the course material related to SRL; the importance of self-directed learning, effective time management, efficient planning and study strategies. The material consisted of short video clips and written articles. The focus of the second assignment was to reflect on these issues in a reflective journal, as this would make the students become more aware of their own weaknesses and strengths in terms of their learning process. The deadline for the reflective journal (two to four pages) was in December 2020.

The students were provided with support questions to deepen their reflections. The questions were: (1) Briefly describe challenges or difficulties you may have encountered during your studies. Also, explain what works well in your studies. (2) Think about your time management and planning strategies: how do you get started on a task and what works well for you? (3) Describe your learning strategies and your way of studying.

Our method is inductive and data-driven since we wished to focus on the aspects that the students highlighted in their journals. We conducted a thematic analysis to investigate students' reports of SRL-related challenges as well as how they managed to utilise SRL-related strategies. The advantage of qualitative thematic analysis is that it is flexible and provides rich and complex findings. The method encompasses six steps, which are: (a) the researchers become acquainted with the data, (b) generate initial codes, (c) search for themes, (d) review themes, (e) define and name themes and finally (f) produce a report. Our aim was to provide a more detailed and nuanced analysis of the employment of first-year students SRL strategies than previous research has been able to generate (Braun and Clarke 2006).

Initially, the journals were anonymised, and fed into the Atlas.ti program. Thereafter, they were read by all the authors multiple times to gain familiarity and to search for basic categories. Then, all the authors coded the same five journals and then compared the independently coded data and resolved discrepancies. The matrix *SRL-related challenges and strategies* was created during this process, with 3 main themes and 12 sub-themes. The first main theme was perceived challenges, including sub-themes isolation, attention regulation, time management, autonomy and workload. The second main theme was *resource-management strategies*, which included *time management*, *academic emotions*, *restructuring study environment and material* and *social support*. The third main theme was subcomponents of SRL that included *academic self-efficacy and meta-cognition*. The 12 sub-themes were used as codes (see Figure 2) during the final coding procedure, which was done by the main author. However, the coding was peer-reviewed repeatedly through the process by the other authors.

Since we aimed to investigate the variety among the students in terms of SRL use, we clustered the data in three categories depending on students' perception of how they managed their studies and adjusted to ERT. Using clustering analysis to classify respondents in profiles is common in quantitative studies. However, in qualitative studies, clustering can also be applied, as this might reveal behavioural motives or reasons behind illogical results (Henry, Tolan, and Gorman-Smith 2005). According to Henry, Tolan, and Gorman-Smith (2005, 121) clustering 'involves sorting cases or variables according to their similarity on one or more dimensions and producing groups that maximise

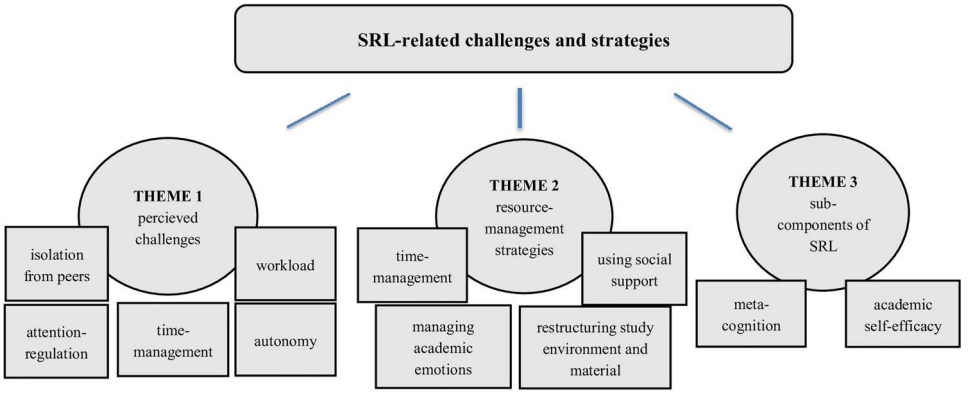

Figure 2. Themes and codes of the thematic analysis.

within-group similarity and minimise between-group similarity'. Hence, we attempted to form non-hierarchical clusters, where the categories were mutually exclusive.

We aimed to assign names to the categorised profiles that reflected how the students perceived themselves in terms of adjusting to the new learning environment, including ERT. Students that experienced low adjustment to and extreme challenges were labelled as 'the stragglers'. These students voiced their experience as follows: 'not much has worked well in my studies so far'. Further, students that experienced (difficult) challenges in beginning of their studies, but were able to adapt at least to some extent, were labelled as 'the adjusters': 'I'm starting to get a handle on how I should plan my days, and I've noticed that academic life require the majority of my time'. Finally, students who experienced no or less burdensome challenges with their studies were labelled as 'the capables': 'Haven't had any particularly difficult challenges with studying'.

The study followed the ethical guidelines for research provided by the Finnish Advisory Board on Research Integrity (2023). The quotes from the reflective journals were translated from Swedish to English by the first author. Special care was taken in collaboration with all authors to ensure that the original meaning of the quotes was preserved in English.

However, using reflective journals as data has some limitations. First, reflective journals give the opportunity to reflect freely on a subject, especially since the support questions were quite broad. A higher number of support questions could have generated more multifaceted answers related to factors closely connected to SRL, such as students' level of self-efficacy and academic emotions. On the other hand, this might have steered the students' reflections too much. Research also argues that students might be dishonest when writing reflective journals as they often write what their teacher wants to hear rather than their honest opinions (Genua 2019). However, we stressed the importance of students' own reflections, as this would support their development of SRL.

Findings

First, we shortly report the findings from the categorisation of students in profiles. Second, we report the qualitative findings according to the three main themes mentioned

in Figure 2. *SRL-related challenges and strategies*; (1) perceived challenges, (2) resource-management strategies and (3) academic self-efficacy and metacognitive strategies.

Student profiles

The categorisation of the students was conducted based on how they perceived themselves in terms of adjusting to the new learning environment, including ERT. This resulted in three groups of student profiles; (1) *the stragglers*, consisting of 6 students (9%), (2) *the adjusters*, consisting of 42 students (63%) and (3) *the capables*, consisting of 19 students (28%). As shown in Table 1, most students belonged to the adjusters-profile and only a small minority to the stragglers-profile.

Perceived challenges

The stragglers generally felt like they were unable to keep up with the other students. They reported feeling lost, being unconnected to university and experiencing the gap between upper secondary school and university as insuperable, as they were unable to use previously learned study strategies:

> University studies have been more difficult than I expected, and a big reason is distance learning. I constantly feel in some way lost. It's so different compared to how it was in upper secondary school and it's hard to adjust to something completely new. The studies have been difficult, and I think it will take longer for me than for many others to develop good study techniques. (Student 26, the stragglers)

Further, these students experienced considerable hardship with independent studying, which had become even more crucial during ERT. They often attributed their struggles with managing their time to the lack of 'control' from teachers. In combination with other factors such as a sense of isolation from peers and teachers, the inconvenient learning environment at home, a sense of disconnection from university, poor attention regulation, an increased workload and a general sense of confusion, made studying nearly impossible for them.

The adjusters typically experienced the same amount of confusion and stress in the transit to HE as the stragglers. They reported experiencing unsuccessful attention regulation when their phone was easy to reach, or they had been struggling with procrastination. However, these students made strong efforts to adjust to the new situation:

> One of the biggest challenges has been studying remotely. Not getting up every morning and going to school has required a lot of self-discipline. Sometimes I've lacked the motivation to even leave bed – 'nobody sees me anyway; I might as well just stay here'. I soon realized that this concept didn't work at all. Studying from home has always diminished my ability to concentrate. I need a clear distinction between study and leisure time, so I started studying

Table 1. Student profiles: management of studies and level of adjustment to ERT.

Student profiles	$N = 67$ (%)
The stragglers	6 (9%)
The adjusters	42 (63%)
The capables	19 (28%)

> at the library instead. This turned out to be great for both my study techniques, efficiency, and mental health. (Student 20, the adapters)

The capables, on the other hand, experienced ERT and the challenges they encountered as relatively easy to cope with. Some of them even experienced ERT as beneficial, both for their learning and for their everyday life. They reported saving time by studying at home, which reduced stress since they could structure their day-to-day life as they wanted. In addition, these students were highly independent – studying autonomously was something they preferred:

> I enjoy being able to choose what I want to study, and I don't feel anxious about if I'm able to choose the right study path. I see myself as independent and I have good discipline. The challenges I have encountered have not been difficult to overcome. (Student 12, the capables)

Resource-management strategies

Most of the stragglers encountered severe difficulties with making use of resource-management strategies such as organising, structuring and planning as well as attention regulation as they struggled with ignoring distracting stimuli. In addition, undertaking and comprehending difficult and extensive course material were perceived as nearly impossible. Even so, some of these students reported being able to or tried to, use resource-management strategies, such as the calendar and making to-do lists, as these were perceived as simple methods of managing time. However, the strategies were used either in an unsystematic or in a non-functional way by the students. Failing in terms of strategy use caused stress and dissatisfaction for the students:

> A disadvantage of writing lists is that I often think that I can achieve more than I do in a day, which in turn makes me feel unsuccessful and dissatisfied with my own performance. (Student 26, the stragglers)

All the adapters mentioned at least one resource-management strategy that they were able to utilise successfully, such as taking notes, writing summaries of course material or keeping up with deadlines. The next quote illustrates how one of the students managed to adapt to the online environment by taking responsibility for their learning in various ways:

> The biggest difficulty has been getting used to Zoom-lectures. It feels less personal, harder to follow and there is a higher threshold for asking for help. After a while, I noticed that the best way to focus on the lectures is to actively take notes throughout the lecture. In this way, I follow the entire lecture. There were also complicated topics discussed during the lectures, but I have kept up with this aspect by studying the things that seemed difficult to me, in my leisure time. (Student 55, the adapters)

The isolation from peers and teachers led to problems with understanding and managing the study material. However, one of the adapters described how the use of social strategies in group work has contributed to their learning, even if meeting through Zoom is not the ideal form of social learning for them:

> Remote learning has affected group work, conversations with other students and contact with teachers. Nevertheless, the group work I have participated in has worked well and I

> have built contacts with other students. Of course, meeting online has made the community much weaker. But my group members have been a huge support, as we were able to help each other understand the material. (Student 44, the adapters)

Some of the adapters reported that actively testing various study techniques was a part of their daily routine. Through this behaviour, the students gradually developed new study techniques. The next quote illustrates how one of the students aims to optimise their learning by altering study techniques from one day to another.

> I have also tried to vary my study environment and I have tried different study techniques. Unfortunately, I haven't found a study technique that feels 100%, but working in intervals has worked well some days. (Student 32, the adapters)

A typical behaviour among the capables was being able to employ various resource-management strategies, but particularly time management strategies. They also possessed a strong self-discipline and managed to avoid procrastination – they systematically started working on their assignments in time before the deadline, making sure that they separated work from their spare time. One student reported that good discipline increases their motivation, and creates a 'positive circle' as higher motivation strengthens their study engagement:

> I manage well and I have the discipline needed. When I set my mind to something, I also get it done. I decide in the morning what to do and then make sure to get it done. Towards the evening, I go through what I have studied during the day. Then I relax in front of a movie or read a book. Therefore, the next day I am again motivated to study effectively because I know I can do something nice in the evening. (Student 45, the capables)

Metacognitive strategies and academic self-efficacy

The stragglers reported mainly negative emotional experiences when they approached their challenges, and their level of academic self-efficacy was generally low. They described their study process in general in negative words and were not satisfied with their academic achievement. This is noticeable in students' descriptions of how they were to manage future assignments, as they feared that they lacked appropriate SRL strategies:

> I dread when I must start reading thick course books. I'm afraid I'll not be able to plan the reading effectively enough because it's more demanding than the assignments I'm used to. The textbooks are boring and difficult to read. (Student 27, the stragglers)

Contrarily, many adjusters reported a positive attitude towards both their peers and teachers and their studying in general. In addition, they typically expressed high levels of academic self-efficacy, as they reported relying on their ability to succeed despite challenges. Some expressed an ability to utilise metacognitive strategies to understand how they learn and approach a task efficiently. For instance, this student described how they have been able to adjust their reading and note-taking strategies to the digital learning situation:

> A challenge for me has been the online literature. I like to take notes with paper and pen and read non-digital literature. But I've noticed that reading digital literature has become easier, and I think it will get even easier if I keep practising. I have also started taking notes on my

> computer, because it is easier to follow lectures and take notes if both are on the same screen. (Student 70, the adapters)

Further, the adapters reflected metacognitively on their learning in their journals. They evaluated their previous study performance, or their reactions towards their performance, and analysed their ability to improve their SRL skills or their approaches to learning:

> I constantly need to confront a thought pattern that developed during my childhood, where being wise was synonymous with being able to do things without asking for help. Therefore, asking for help feels difficult for me, both in my working life and in my studies, because I unconsciously think that I would be considered stupid if I asked for help. (Student 20, the adapters)

Many of the capables expressed almost extraordinary levels of academic self-efficacy. They reflected vividly on their strengths as learners; their efficiency, motivation, ambition and especially on their strong interest in learning in general, especially in learning beyond what is covered in individual courses at the university. Some also stressed the skills they have acquired outside of academia as the most important ones for their personal and academic success:

> Through my hobbies (dance and music), I have developed a physical-kinesthetic talent. Another strength I possess is intuition. I largely have my mother to thank for that. She has taught me to understand myself and find my own path in life. She also has taught me to appreciate what I have and understand the responsibility that each of us carries for our own lives. My family has always supported me and convinced me that I can do whatever I set my mind to in life. (Student 58, the capables)

Discussion

The aim of this study was to investigate first-year students' perceived SRL-related challenges as well as how they engaged in SRL during ERT in the autumn of 2020 at a university in Finland. The research question was: *What were the students' various experiences of their self-regulated learning during ERT?* We focused on students' SRL-related challenges and how they coped with these challenges with the support of resource-management and metacognitive strategies. We also analysed students' level of academic self-efficacy.

First, this study confirms the importance of self-regulated learning for study success among first-year students (e.g. Perander, Londen, and Holm 2021). Second, the respondents in general experienced all previously reported challenges with SRL during ERT, such as problems with organising their learning in general due to reduced social interaction as well as high demands on studying autonomously and (e.g. Biwer et al. 2021; Naujoks et al. 2021; Pelikan et al. 2021).

However, the most valuable contribution of this study are the results that emerged from the categorisation of the data in student profiles. The analysis produced three profiles that demonstrate how the students confronted the SRL-related challenges in considerably different ways in terms of their ability engage in SRL and particularly in how they approached the SRL-related challenges mentally.

The stragglers experienced a nearly total inability to engage in studying. The weight of too many various types of challenges such as managing the increased workload, the

isolation from peers and teachers and the inability to manage their resources effectively became a burden. Particularly the inability to manage time and regulate attention, which led to procrastination, created a vicious circle where these students ended up with 'getting nothing done'. They were not prepared for the degree of self-directedness that university studies and online studying required. It seems that the students were unable to perform the forethought phase (Zimmerman 2002) or were not aware of its importance for successful studying, as they were unable to plan and schedule their studies. In addition, these students reported low academic self-efficacy as they feared failure as well as often felt that they could not apply appropriate resource-management strategies for their learning (see also Naujoks et al. 2021; Schunk 1990).

The adapters, on the other hand, were able to adapt relatively well to ERT, presumably due to their high degree of persistence and academic self-efficacy as well as their positive academic emotions, as they focused more on their achievements than on their failures. In addition, they were in general able to make use of the feedback-loop, illustrated in Zimmerman's SRL model (2002). Through metacognitive reflection, they reflected on their previous mistakes and readjusted (parts of) their learning process, which in turn made them aware of advantages with planning, setting goals and reflecting on their capability to learn. Hence, they soon after the transit to HE, started to do strategic planning of their studies, managing them with time schedules or to-do lists, and allocating study time separately from leisure time.

Finally, the capables were satisfied with their study performance as of yet and expressed less burdensome or no challenges with ERT. Many of them even preferred ERT to onsite studying (see also Hyland and O'Shea 2021). Compared to the other students, they reported strong self-discipline and an ability to employ previously learned SRL strategies. They were especially talented in time management and attention regulation as they consciously avoided procrastination. They were interested in learning on a general level, highly motivated and focused on their strengths as learners. Many of these students did not 'struggle' with their studies at all – they just 'got it done'.

Conclusion

First, it is obvious that most of the first-year students adjusted relatively well to ERT and HE and learned to, or were able to, regulate their learning at least to some extent during their first autumn at university. This is in line with previous research on both more experienced (Biwer et al. 2021; Hyland and O'Shea 2021; Klimova et al. 2022) and on first-year students (Liebendörfer, Kempen, and Schukajlow 2022). Second, the result of this study stresses particularly the significance of time management skills (see also Wilson, Joiner, and Abbasi 2021) and the ability to regulate attention, as well as the importance of positive academic emotions, a high level of self-efficacy and persistence, among first-year students during transit to university (see also Perander et al. 2020) and during ERT.

Third, becoming a self-regulated learner is not attained merely by personal processes, as students are also affected by contextual factors (Zimmerman 2000). Thus, teachers have a crucial role in supporting first-year students' SRL skills, to avoid drop-outs among students such as the stragglers. A pandemic situation confirms the diversity between and among the students and widens the gap between those who have strong

academic capital (e.g. parents with university education and/or a strong cultural capital) and those who enter HE without previous experience of an academic discourse. These aspects require teachers to be flexible in terms of the amount of support and supervision given to each student, especially during ERT. As we have seen in this study, remote learning is not suitable for all students. Even if students possess SRL skills and know how to apply them, isolation in combination with insufficient social support can still hinder efficient learning. Therefore, teachers should be attentive of how students manage in their studies, particularly during the encounter period when they transit to HE. In addition, training the students' self-regulated skills, and especially stressing the importance of the forethought phase is equally important. Teachers should also encourage the students and strengthen their self-efficacy beliefs, through for instance positive and constructive feedback on their assignments (Caffarella and Barnett 2000). These issues need to be raised in university pedagogy training and in faculties' discussion on the development of teaching.

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